Claims

1. (Previously Presented) A method for lossy compression of at least a portion of an input audio signal, and lossless compression of at least a second portion of the input audio signal, the method comprising:

encoding a frame of the input audio signal using lossy compression based on a lapped transform as a lossy frame;

determining compression performance for the lossy frame;

if the compression performance of the lossy compressed frame fails to meet an acceptable compression performance criteria, encoding the frame as a mixed lossless frame via a coding processing comprising:

1) processing the frame to effect the lapped transform and an inverse of the lapped transform of the frame to produce a processed frame, and

2) losslessly compressing the processed frame;

determining compression performance for the mixed lossless coded frame; and outputting better performing of the lossy frame or the mixed lossless frame.

2. (Previously Presented) The method of claim 1 wherein said lossy coding comprises non-rectangular windowing, and said encoding the frame as a mixed lossless frame also comprises the non-rectangular windowing.

3. (Previously Presented) The method of claim 2 wherein said non-rectangular windowing uses a sine windowing function.

4. (Previously Presented) A digital signal encoder for lossy compression of an input signal, comprising:

a lossy codec for encoding frames of the input signal using lossy coding based on a lapped transform;

a mixed lossless codec operative when a frame of the input signal for which said lossy coding fails to meet an acceptable compression performance criteria, to encode the frame using

another coding comprising processing the frame to effect the lapped transform and an inverse of the lapped transform of the frame, and losslessly compressing the frame; and

a lossless codec operative when a subsequent frame of the input signal for which said lossy coding fails to meet an acceptable compression performance criteria, to encode the frame using another coding comprising losslessly compressing the frame.

5. (Original) The digital signal encoder of claim 4 wherein said lossy coding comprises non-rectangular windowing, and said other coding also comprises the non-rectangular windowing.

6. (Original) The digital signal encoder of claim 5 wherein said non-rectangular windowing uses a sine windowing function.

7. **(Currently Amended)** A computer-readable **storage** medium having computer-executable software code carried thereon for executing on a computing device to effect a method for lossy compression of at least a portion of an input audio signal, and lossless compression of at least a second portion of the input audio signal, the method comprising:

encoding a frame of the input audio signal using lossy compression based on a lapped transform as a lossy frame;

determining compression performance for the lossy frame;

if the lossy frame fails to meet an acceptable compression performance criteria, encoding the frame as a mixed lossless frame via a coding processing comprising:

1) processing the frame to effect the lapped transform and an inverse of the lapped transform of the frame, and

2) losslessly compressing the frame;

determining compression performance for the mixed lossless coded frame; and

outputting better performing of the lossy frame or the mixed lossless frame.

8. **(Currently Amended)** The computer-readable **storage** medium of claim 7 wherein said lossy coding comprises non-rectangular windowing, and said coding the frame as a mixed lossless frame also comprises the non-rectangular windowing.

9. (**Currently Amended**) The computer-readable **storage** medium of claim 8 wherein said non-rectangular windowing uses a sine windowing function.

10. (Previously Presented) A method for mixed lossless compression of an input audio signal, the method comprising:

applying a windowing function to a frame of the input audio signal using an encoder to produce a windowed frame;

applying a lapped transform and its inverse transform which support perfect reconstruction on the windowed frame to generate a pseudo time domain signal using the encoder; and

if the frame is a transition frame between lossy and lossless compressed frames, then using mixed lossless compression to compress the pseudo-time domain signal using the encoder, else, losslessly compressing the pseudo time domain signal using the encoder.

11. (Original) The method of claim 10 wherein the windowing function is rectangular in shape.

12. (Original) The method of claim 10 wherein the windowing function is non-rectangular in shape.

13. (Original) The method of claim 10 wherein the windowing function is part-rectangular part non-rectangular in shape.

14. (Previously Presented) A method for creating a pseudo time domain signal to switch the coding from lapped transform based codec to time domain codec for one or more particular frames, the method comprising:

applying a windowing function on the input audio signal to produce a windowed frame;

applying a lapped transform and its inverse transform on the windowed frame to generate a pseudo time domain signal; and

using a time domain codec to losslessly compress the pseudo time domain signal;

wherein applying a lapped transform and its inverse transform on the windowed frame to generate a pseudo time domain signal comprises performing a matrix multiplication with the windowed frame.

15. (Canceled)

16. (Previously Presented) The method of claim 14 wherein the pseudo time domain signal comprises only output independently valued samples of the matrix multiplication with the windowed frame.

17. (Previously Presented) The method of claim 14 wherein the pseudo time domain signal is coded using linear predictive coding with a first order LPC filter.